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REMARKS/ARGUMENTS

Reconsideration of the application is requested.

Claims 1-10 remain in the application. Claims 1, 3, 4, and 9 have been amended. Claim 2 has been canceled.

More specifically:

- Claim 1 has been amended by incorporating the subject matter of the original claim 2. As amended, claim 1 calls for the second discharging current (provided by the discharging circuit 20) to be smaller than the first discharging current (provided by the unit 10).
- Claim 4 has been amended by rewriting the claim in independent form. In view of its indicated allowability, claim 4 is now in condition for allowance.
- Claim 9 has been amended by rewriting the claim in independent form. In view of its indicated allowability, claim 9 is now in condition for allowance.

Applicants herewith affirm the election of claims 1-9 for prosecution. Claim 10 has not been cancelled at this time. Claim 10 is a method of driving a semiconductor switching element, i.e., it is a method of using the device of any of claims 1-9. Claim 10, therefore, is a candidate for a

rejoinder under MPEP 821.04. See 1184 OG 86, March 26, 1996; In re Ochiai, 37 USPQ2d 1127 (Fed. Cir. 1995); In re Brouwer, 37 USPQ2d 1663 (Fed. Cir. 1996). The Examiner's cooperation in this matter will be appreciated, that is, the Examiner is requested to telephone counsel after claims 1-9 are held allowable to ensure that claim 10 can be properly rejoined into the application.

We now turn to the art rejection in which claims 1-3 and 5-7 have been rejected as being anticipated by Ishii (U.S. Patent No. 5,977,814) under 35 U.S.C. § 102(b). We respectfully traverse on the basis of the amended claims.

The circuit configuration according to the claimed invention has an output terminal AK and a charge configuration (capacitive storage configuration C) that is coupled to the output terminal. There are claimed two additional functional units, namely, the charge/discharge circuit (shown at 10) and the discharging circuit (shown at 20). Both of the discharge units are connected to the capacitive storage configuration and they provide charging current and discharging current for the charge configuration. The discharging currents, as claimed, are different in value between the unit 10 and the unit 20.

The charge/discharge circuit of the invention provides a charge current or a discharge current for the capacitive storage configuration in accordance to its drive signal. The semiconductor switch that is connected to the output terminal AK becomes conductive when the capacitive storage configuration has been charged to a predetermined potential, which corresponds to the threshold potential of the semiconductor switch. In order to block the semiconductor switch very rapidly - this is particularly important when the semiconductor switch is connected in a drive circuit of a spark plug - then the charge/discharge configuration provides a correspondingly large discharge current, which rapidly discharges the capacitive storage configuration.

The "discharging circuit" 20 of the claimed invention is provided for safety reasons. It serves the purpose to discharge the capacitive storage configuration with a discharge current that is smaller than the "regular" discharge current of the charge/discharge circuit. The smaller discharge current is chosen such that the semiconductor switch is slowly transitioned from its conductive state to its non-conductive state. This ensures that no spark can be generated where the semiconductor switch is connected in the drive circuit for a spark plug.

The discharging circuit discharges the capacitive storage configuration permanently; yet the discharge current of that additional discharging circuit is so small in comparison with the charging current and discharging current provided by the regular charge/discharge configuration as to become negligible during regular operation of the circuit. That is, the safety discharge has virtually no impact on the functionality of the circuit during its regular feed of charging current or discharging current by the charge/discharge configuration. The additional discharging circuit (20) becomes effective only when the charge/discharge circuit ceases delivering current and it discharges the capacitive storage configuration very slowly for safety reasons, so as to slowly block the semiconductor switch (and to avoid a spark in the case of the spark plug application).

Once more with regard to the claimed invention, claim 1 defines the output terminal (to which a semiconductor switch can be connected) and the functional units that include the capacitive storage configuration, the charge/discharge circuit, and the discharging circuit. Furthermore, claim 1 calls for the second discharging current (the current provided by the discharging circuit) to be smaller in value than the

first discharging current (the current provided by the charge/discharge circuit).

Applicants appreciate the Examiner's summary of the reference Ishii in large part. With reference to Fig. 4 of the reference, Ishii describes a circuit configuration for driving a semiconductor switch 9 (IGBT). The circuit includes a capacitive storage element 13 which is connected in series with a transistor 14. The capacitive storage element 13 is charged and discharged by the charge/discharge circuit when the transistor 14 is driven by a signal at the terminals 12. The charge/discharge circuit includes a transistor 3, through which the voltage source 1 can be connected to the capacitive storage element 13 for charging the element 13. A second transistor 4 is utilized for discharging the element 13 by pulling it to the second voltage source 2. The drive terminals 11 define which of the transistors is conductive or blocked, so as to define whether the element 13 is being charged or discharged.

In short, the circuit of Ishii does not have a discharging circuit that provides for a lesser discharging current than the discharging circuit through the transistor 4. We are mindful of the Examiner's reading of the illustrated resistor 10 on our claimed discharging circuit. As clearly explained by

Ishii, however, the resistor 10 is but an inherent gate/emitter resistor 10 of the switch 9. See, for example, col. 1, line 22; col. 4, lines 10-11.

The equivalent circuit of the IGBT shown in Figs. 5(a) and 5(b) of Ishii is even clearer in this respect. There, we see that the resistor 10 illustrated in the other figures but represents a part of the IGBT itself. The IGBT, of course, is the equivalent of the power transistor T to be switched by the circuit according to applicants' claims.

It is thus clear that the invention of claim 1 is not anticipated by the disclosure of Ishii. The non-anticipation has been further fortified by the incorporation of the subject matter of claim 2 into claim 1. As amended, the safety-related discharging unit discharges with a lesser current than the regular discharging unit.

In summary, neither Ishii nor any other of the references of record, whether taken alone or in any combination, either show or suggest the features of claim 1. Claim 1 is, therefore, believed to be patentable over the art and since all of the dependent claims are ultimately dependent on claim 1, they are believed to be patentable as well.

It is appreciatively noted that claims 4, 8, and 9 have been indicated as being allowable. In light of the fact that claim 1, as amended, is patentable, it is not believed to be necessary to limit the independent claim 1 to the features of

claims 4, 8, or 9. Claims 4 and 9 have nevertheless been rewritten in independent form so as to provide two independent claims without the limitation of the original claim 2.

In view of the foregoing, reconsideration and allowance of claims 1 and 3-10 are solicited.

Petition for extension is herewith made. The extension fee for response within a period of two months pursuant to Section 1.136(a) in the amount of $420.00 in accordance with Section 1.17 is enclosed herewith. Please charge any other fees which might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,

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